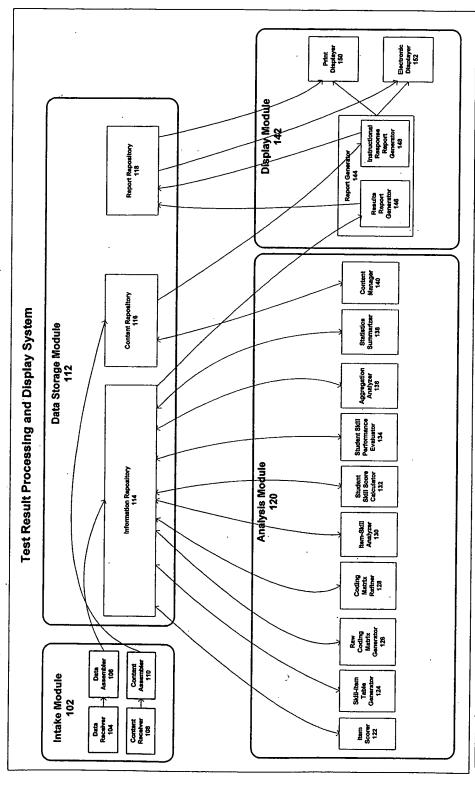
p

Figure 1 Diagram of the System



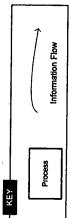


FIGURE 2
Technical Components of the System

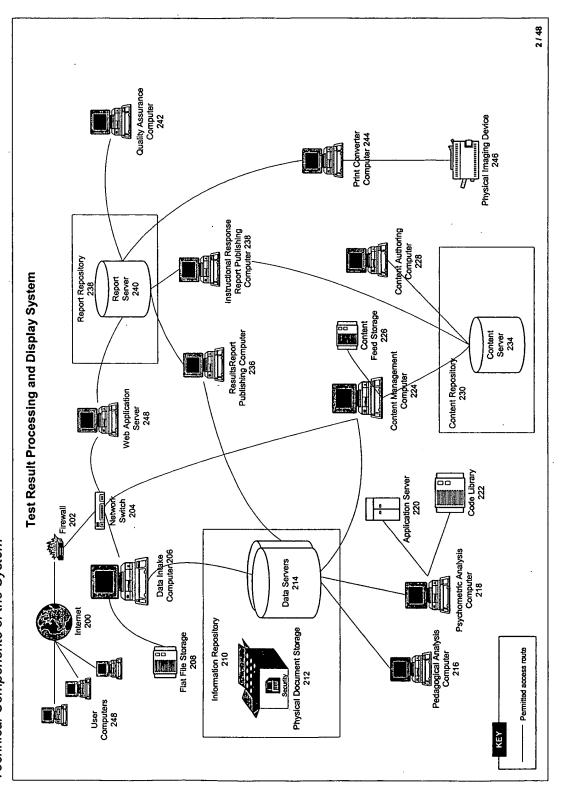
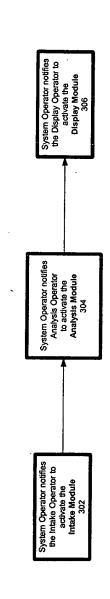


FIGURE 3
Flowchart of the System



KEY Process

FIGURE 4

Diagram of the Operation Components of the Intake Module

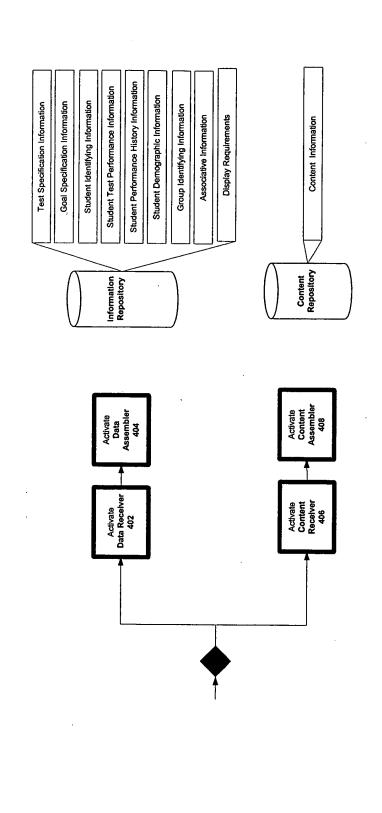




FIGURE 5 Diagram of the Data Storage Module

Content Repository 504	Subject overviews 566 Skills definitions 588		Cassinom activities for teaching Skills 5/0	Complete of the first of the fi	daripie prodients in okins 5/4	etc.			Report Repository 506		Results Reports 576	Instructional Response Reports 578	Print Templates 580	Electronic Templates 582 Electronic Document Structures for Results Reports 584 Electronic Document Structures for Instructional Response Reports 586	5 / 48
	Analysis Module	Student Skill Scores* 548	Obtained Skill Scores for each Skill* 550	Student Evaluation Statements by Skill 552	Group Skill Scores 554	Group Evaluation Statements by Skill 556	Pedagogical Constraints 558	Summary Statistics 562							
Information Repository 502	Information Generated by Analysis Module	Item Scores for each Student* 526	Skill Sets* 528	Skill Organizations* 530	Skill-Item Tables* 532	Items Assessing a Skill* 534	Skill-Specific Item Scores for each Student* 536	Item Score Arrays for each Student* 538	Fall-off Ratios* 540	Raw Coding Matrices* 542	Refined Coding Matrices* 544	Quality Rating Information for Refined Coding Matrices* 546		• = If required	
	Externally Provided Information	Test Specification Information 508	Goal Specification Information 510	Student Identifying Information 512	Student Test Performance Information 514	Student Performance History Information 516	Student Demographic Information 518	User Information 519	Group Identifying Information 520	Associative Information 522	Display Requirements 524				

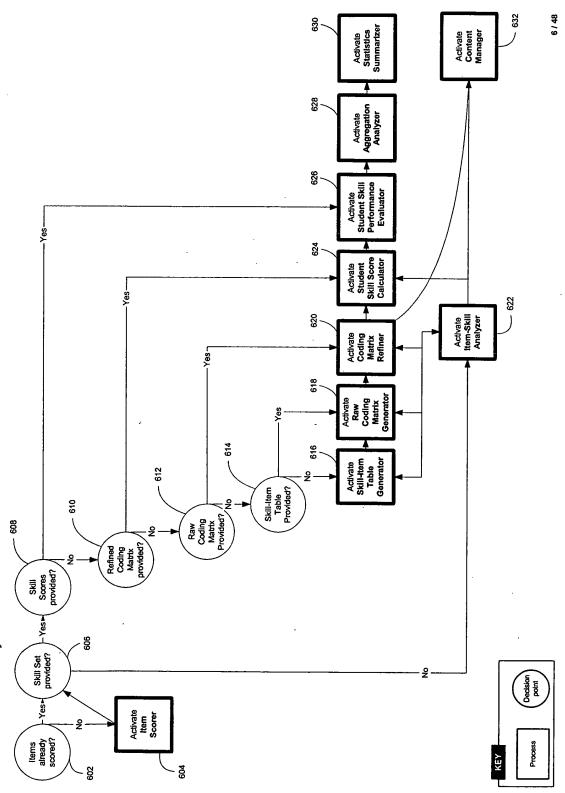


FIGURE 6 Flowchart of the Analysis Module

FIGURE 6A Block Diagram of Item-Skill Analyzer

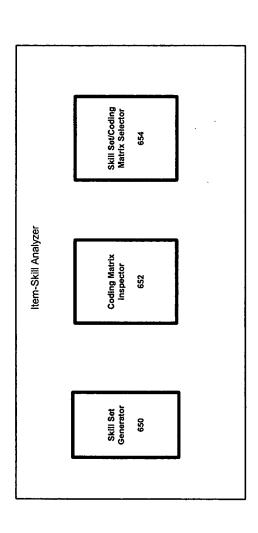
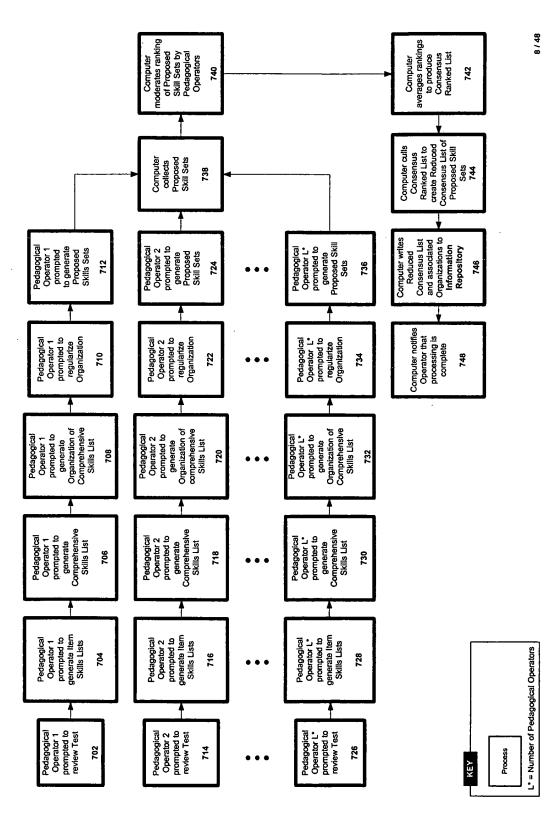


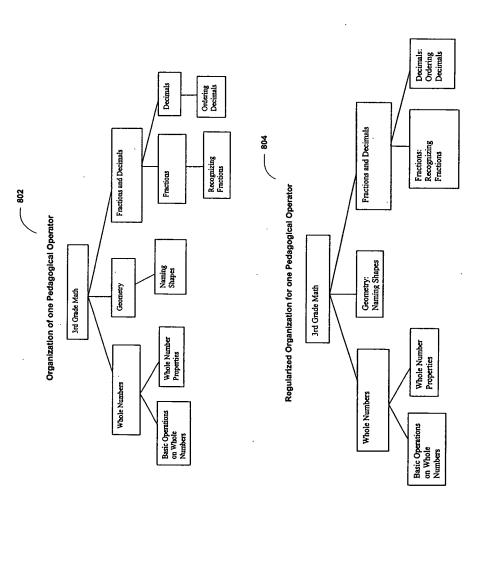


FIGURE 7
Flowchart of the Skill Set Generator



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FIGURE 8
Diagram of Skill Organizations



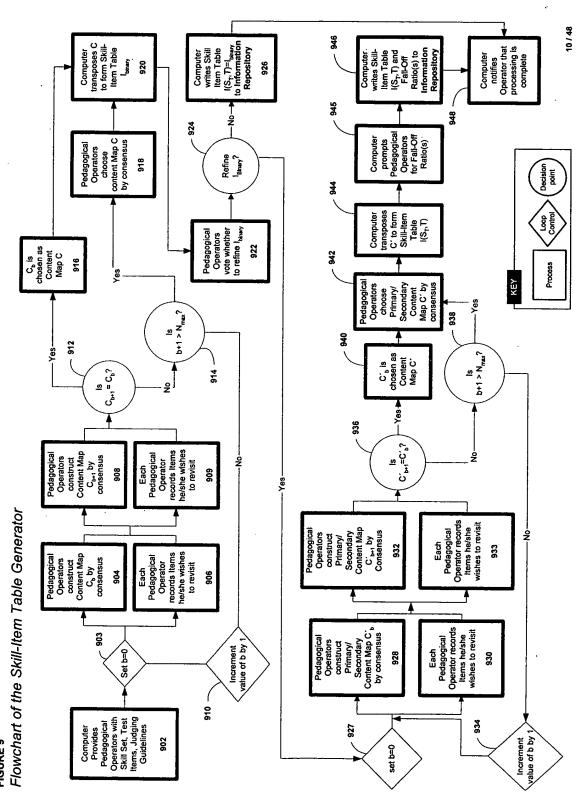


FIGURE 9

FIGURE 10 Flowchart of the Item-Skill Analyzer

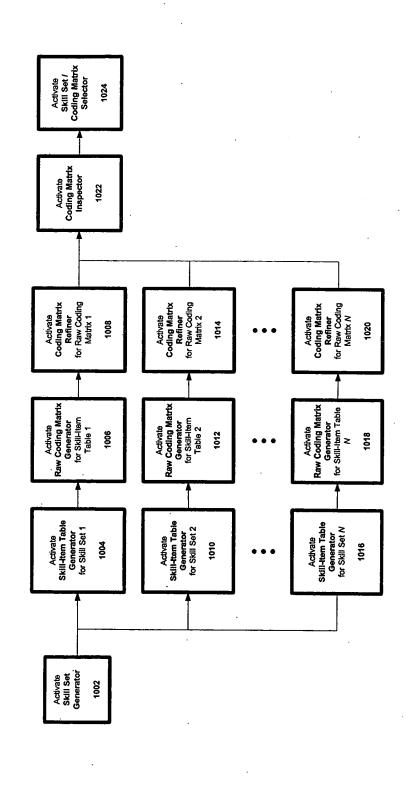
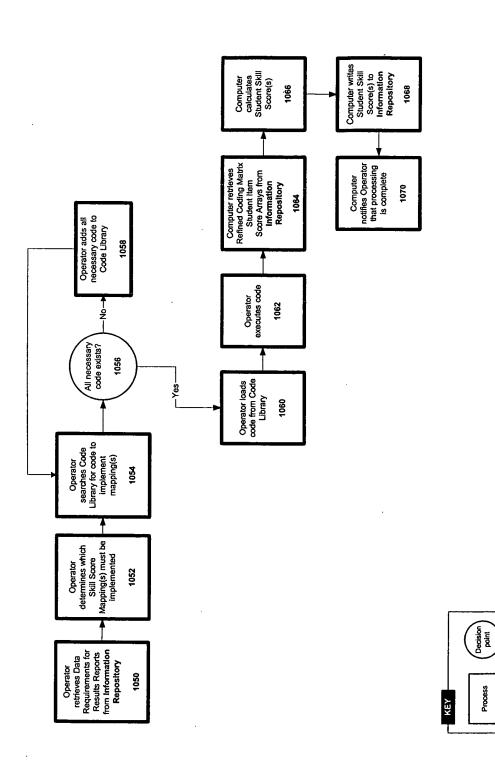


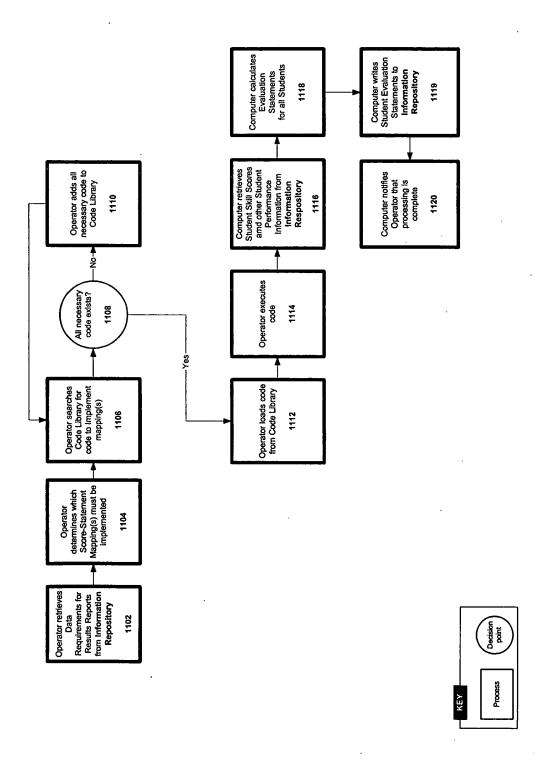


FIGURE 10A
Flowchart of the Student Skill Score Calculator



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FIGURE 11
Flowchart of the Student Skill Performance Evaluator



Flowchart of Criterion Mapping Execution FIGURE 12

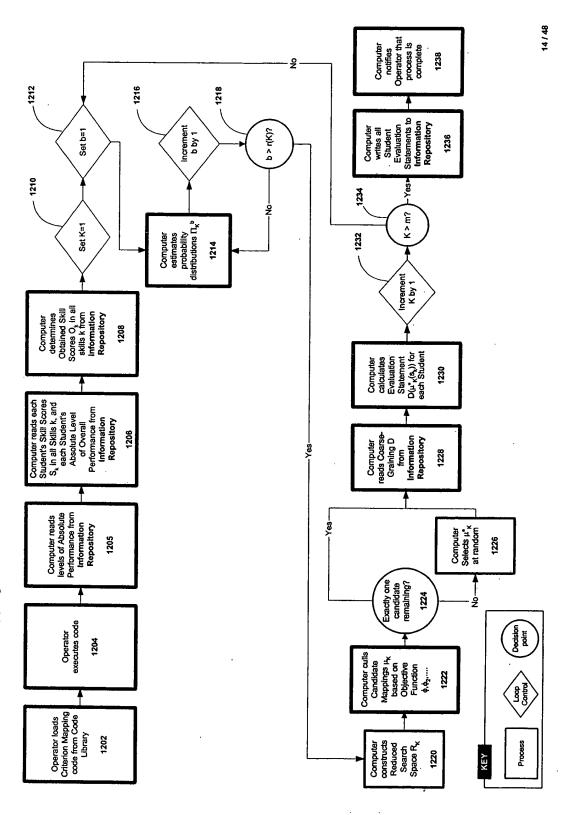
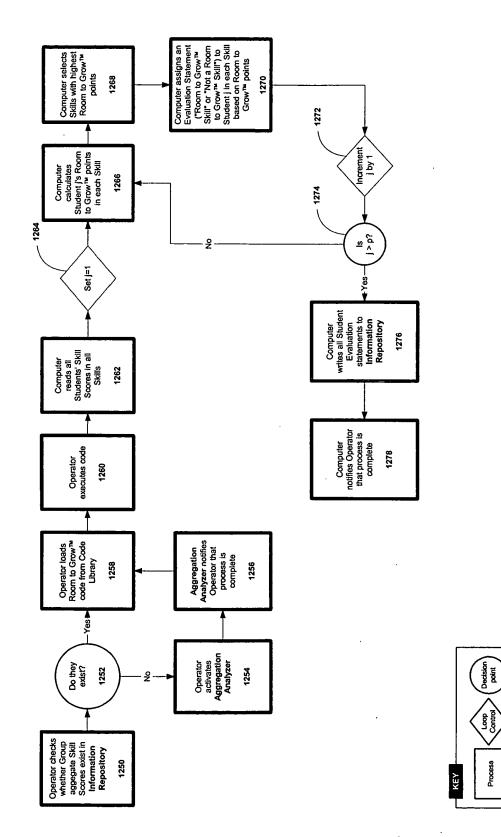


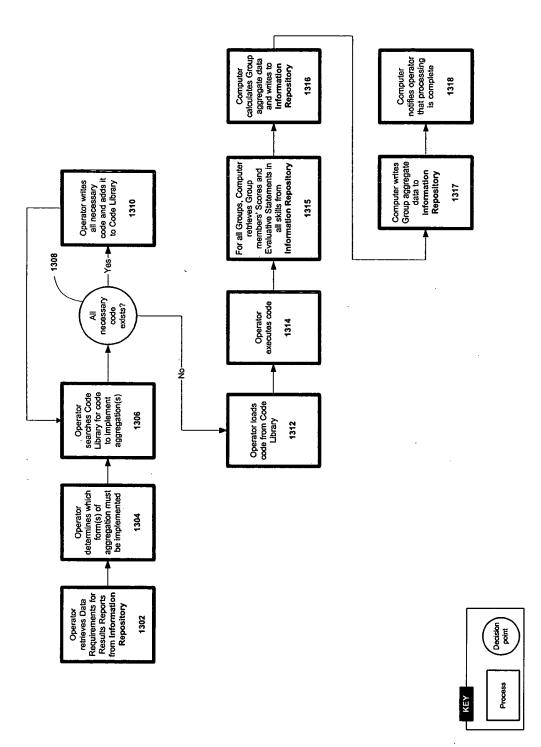
FIGURE 12A Flowchart of a Room to Grow[™] Prioritization



15/48

Figure 13
Flowchart of the Aggregation Analyzer

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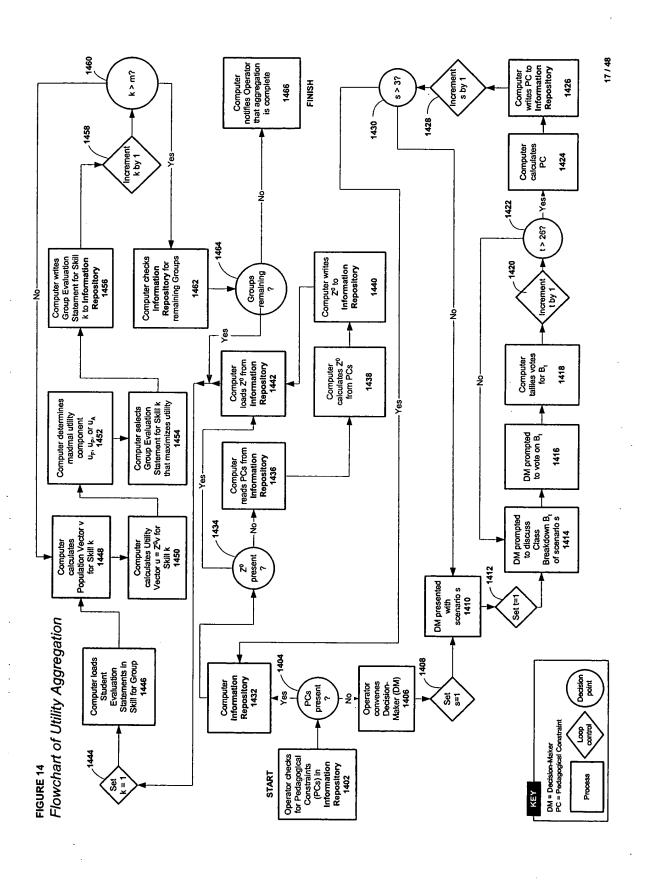


FIGURE 14A Class Breakdowns for First Scenario

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FIGURE 14B
Class Breakdowns for Second Scenario

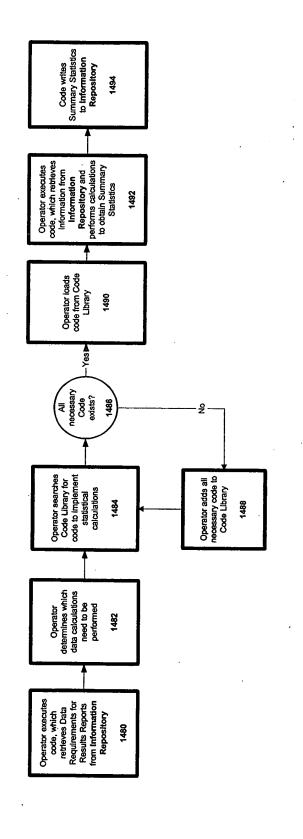
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FIGURE 14C Class Breakdowns for Third Scenario

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FIGURE 14D
Flowchart of the Statistics Summarizer



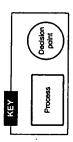
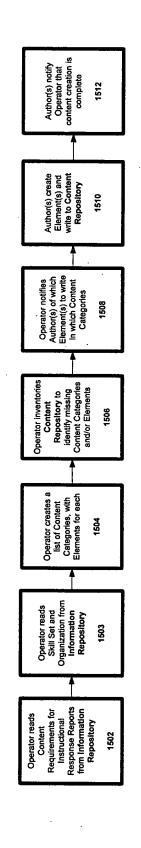


Figure 15
Flowchart of the Content Manager





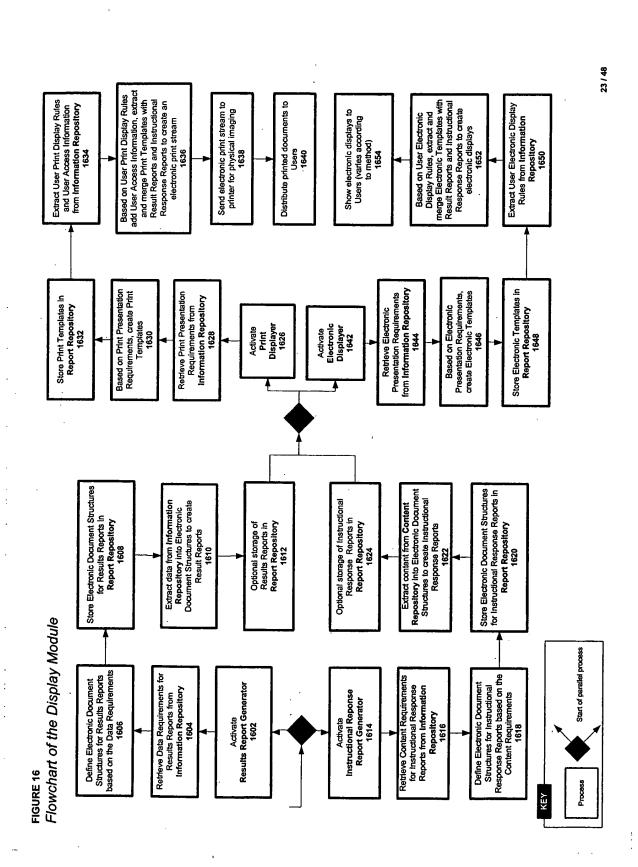
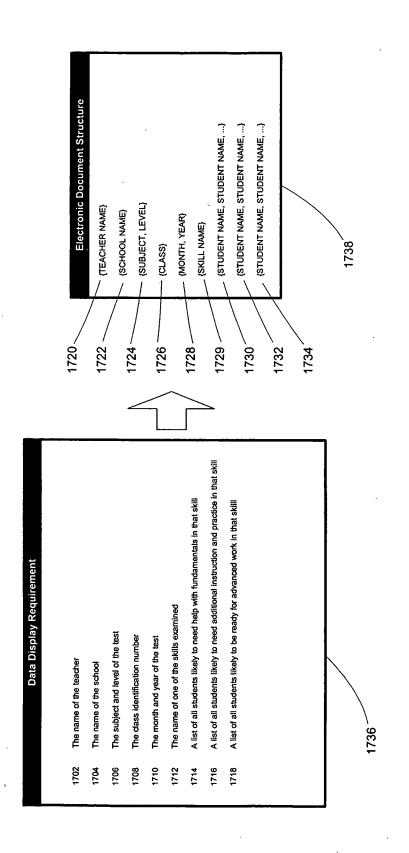


FIGURE 17
Diagrams of a Data Display Requirement and an Electronic Document Structure



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<strategies>
 + <fundamentals>
  ctice>
     <introduction>
       If your students need some additional instruction and practice, you can try some of
          the activity ideas listed below.
     </introduction>
    <activity>
       <description>
          Ask students to think of a few situations in which they might want to add the same
             number over and over. Some ideas to get them started might be:

    !ist>

            <!istItem>counting the total number of wheels in a group of 8 cars</iistItem>
            <listItem>counting the total number of keys on 5 calculators of the same
               type</listItem>
            titem>counting the total number of pencils in 10 boxes of pencils
          </list>
          Then have them make up a word problem to go with each situation, and solve a
             few of these problems.
       </description>
     </activity>
   - <activity>
     - <description>
          Ask students to think of a few situations in which they might count things in
             arrays. Here are some arrays they might use.
            <listItem>seats on a bus</listItem>
            <listItem>windows on a building</listItem>
          </list>
          Then have them make up a word problem to go with each situation, and solve a
             few of these problems.
       </description>
     </activity>
   <activity>
     - <description>
          Ask students to think of a few "times as many" situations. Here are some ideas to
             get them started.
        - <list>
            titem>One store has 5 times as many customers as another store.
            tem>One team has 3 times as many points as another team.</listItem>
            stItem>One car costs 4 times as much as another car.
          </list>
          Then have them make up a word problem to go with each situation, and solve a
             few of these problems.
       </description>
     </activity>
   <activity>
     - <description>
          Ask students to think of a few situations in which they might break a big group
            into smaller groups. Here are some ideas to get them started.
        - <list>
            tistItem>Spread 100 seeds evenly along 10 rows in the garden.
            ttem>Split the class into 4 equal teams to play a game.
         </list>
         Then have them make up a word problem to go with each situation, and solve a
            few of these problems.
       </description>
     </activity>
  <advanced>
</strategies>
```

FIGURE 19 (page 1 of 2)

Diagram of a Sample Printed Report

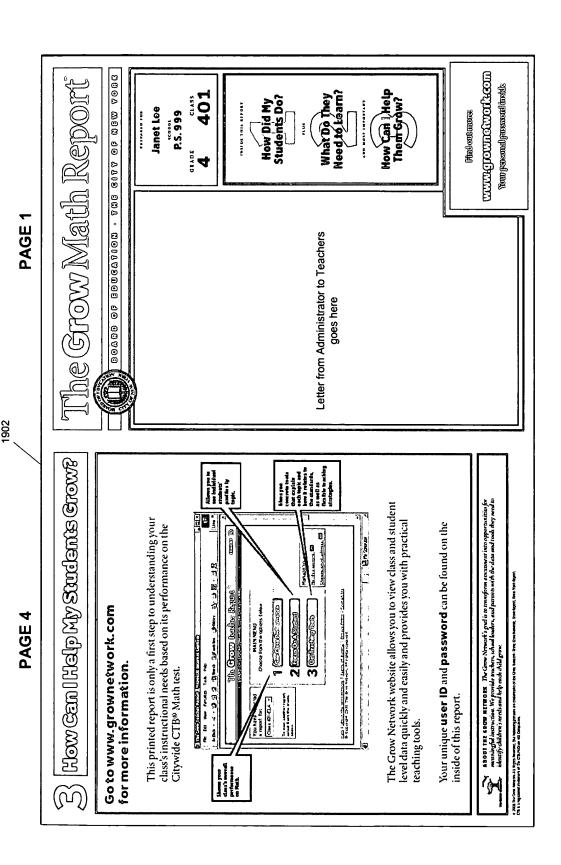


FIGURE 19 (page 2 of 2)

Diagram of a Sample Printed Report

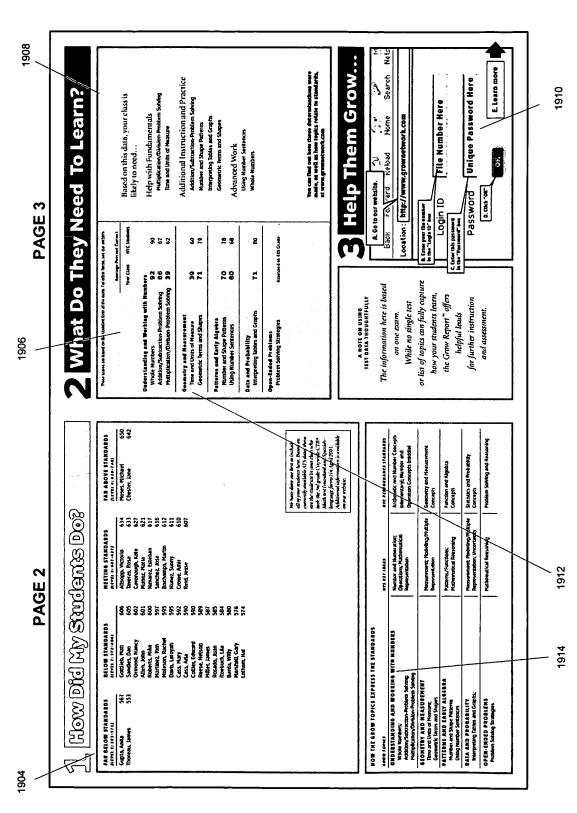


FIGURE 19A Diagram of a Complex Data Display in Print

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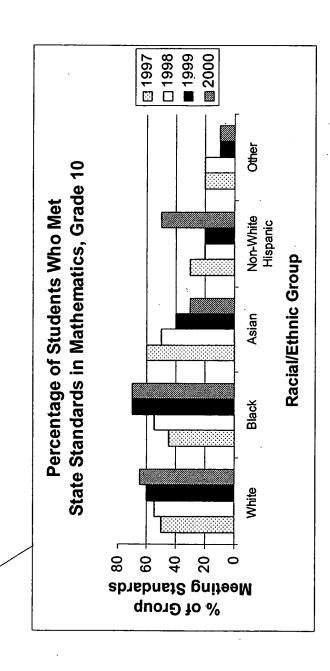


FIGURE 20 Diagrams of a Results Report and an Electronic Display

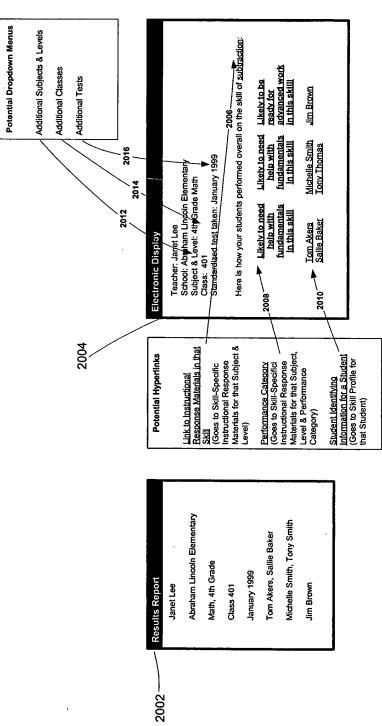
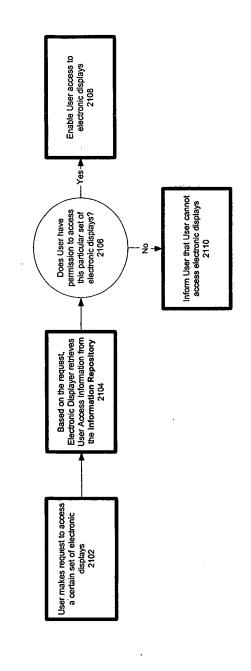
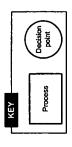
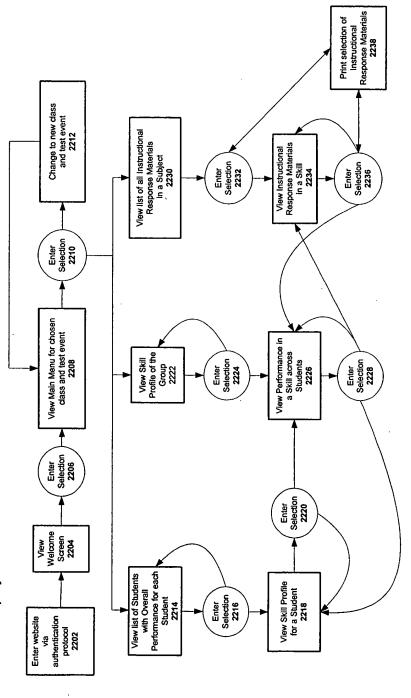


Figure 21
Flowchart of the User Authentication Process





Flowchart of a Display Website FIGURE 22



In addition to the linkages shown here, all "Enter Selection" decision points allow User to:

* Return to Main Menu

* Go to help and general information screens

* Change user authentication information

* Log out

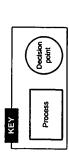


FIGURE 23

Diagram of a "Welcome" Display

Eacher Report THE CITY OF NEW YORK THE CITY	
The Grow Teacher Report " SORE OF EDUCATION - THE CITY OF NEW YORK Welcome, Janet Lee, to your Grow Report" Online! On this website, you can find in-depth information about your class and individual students, as well as instructional tools designed to help address their strengths and weaknesses. To begin, select a report from the list below. Choose a class & subject-	data are listed above diff 2002 The Grow Naturals All Highs: second

ғівике 24 Diagram of a "Main Menu" Display

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	The Grow Teacher Report"	LOGOUT
	BOARD OF EDUCATION - THE CITY OF NEW YORK	
পতিতা perce selegged : ভাদেছাতাপে তিনে 19999-Class 402-MATH (4) তা তি	MAIN MENU 99999 Grade 4 - MATH Choose from the options below:	
බම ගුණා කොමාන අනුමේදී ජෙවස්න (අ ගිය කුණෙපැන්නෙන්න	জি See Class Performance	
	2 Focus on a Student	February 4, 2002 We have updated the Site Information page. <u>Click</u> here to go there now.
	3 Get Teaching Tools	Help & Support Modify password Change e-mail address
Help & Support: About the Grow	Help & Support: About the Grow Network: Terms of Service: Security & Privacy Policy: Contact Us	lisy: Contact Us
© Copyright 2002 The Grow Network. All rights reserved.	work; All rights reserved.	

FIGURE 25 Diagram of a "Students' Overall Performance" Display

2502

Focus on a Student class 402 - NATH (4)	rdent -8ee snother 1 (4)			-See another class & subject- ব্রিণিটে	§ subject-	160	
Select a student to see his or her performance by topic.	see his or her	performanc	s by topic				
Far Below Standards Level One (385-571)	Below Standards Meets Standards Level Two (572:606).	irds Maei	Far Above Meers Standards Standards Level Three (607-637) Level Four (638-740)	ds Star	Far Above Standards Level Four (638-7	ļ ģ	
Liwari, Satya 570 Tiongson: Armando 570	Supple: Adam Ibomas: Jeffrey	603 Razon Christon 603 Walsh D	per l	Desoma. 620 Margaret In 616	uma. Karet	4	,
	Santos. Patricia	Maiar 600	Majarkey, Don	616			2506
	Mendoza. Maria	See Williams.) }			
	Karamazov. Alex	S92 LL SI-Mu		512 607	eis 1 gil i	y y	
	Iran, Hung	592					
	Popodopolous. Magdaline	592					
	Pangit: Helen	588					
	Castillo. Blesilda	588					
	White Brandy	585					
	Lukaziac.	585					
	Reubin: Mark	581					
	Santos, Heidee 581	581			i (A.) Ani. Ani.		
	Jones, Heather 573	573					
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FIGURE 26 Diagram of a "Skill Profile of a Student" Display

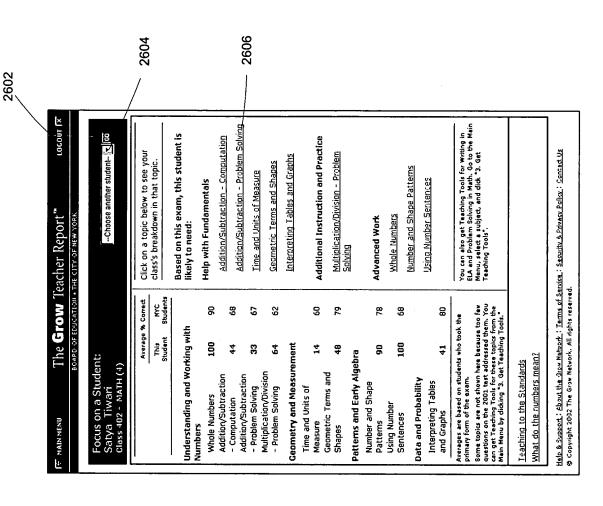
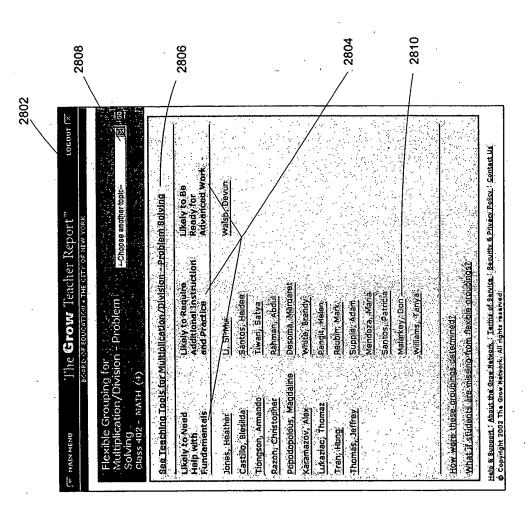


FIGURE 27 Diagram of a "Skill Profile of a Group" Display

Performance by 1	Topic		Topic — See another class & subject. [7] [60]	2104
Class 402 - MATH (4)				
	Average % Correct	Correct	Click on a topic below to see your	
	This Class	MYC	class's breakdown in that topic.	
		21902		
Understanding and Working with	rking with		based on this exam, students in your class are likely to need:	
Whole Numbers	78	72	Help with Fundamentals	
Addition/Subtraction	2	:	Addition/Subtraction - Problem Solving	2706
- Problem Solving	09	29		817
Multiplication/Division				
- Problem Solving	55	29	Additional Instruction and Practice	
Geometry and Measurement	ment		Whole Numbers	
Time and Units of			Multiplication/Division - Problem	
Measure	99	- 29	Solving	
Geometric Terms and Shapes	84	80	Time and Units of Measure	
Patterns and Early Algebra	bra		Using Number Sentences	
Number and Shape	ì			
Patterns	16	<u>~</u>	Advanced Work	
Sentences	88	98	Geometric Terms and Shapes	
Data and Probability			Number and Shape Patterns	
Interpreting Tables and Graphs	82	79	Interpreting Tables and Graphs	
Averages are based on students who took the primary form of the exam.	its who took th	ar.	You can also get Teaching Tools for Writing in	
Some topics are not shown here because too few questions on the 2001 test addressed them. You can get Teaching Tools for these topics from the Main Menu by dicking "9. Get Teaching Tools."	re because to dressed them se topics from Teaching Tool	o few . You the s."	ELA and Problem Solving in Math. Go to the Main Menu, select a subject, and click "3. Get Teaching Tools".	
Teaching to the Standards What do the numbers mean?	<u>s</u> <u>an î</u>			

FIGURE 28

Diagram of a "Performance in a Skill across Students" Display



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F MAIN MENU The

The **Grow** Teacher Report"

BOARD OF EDUCATION . THE CITY OF NEW YORK

Get Teaching Tools™ for all Topics Class 402 - MATH (4)

Click on a topic to see detailed instructional information.

Addition/Subtraction - Computation

1. Facts and Computation

Addition/Subtraction - Problem Solving

- 1. Addition Situations
- 2. Subtraction Situations
- 3. Situations With a Twist

Fractions and Decimals

- 1. Understanding Fractions
- 2. Understanding Decimals
- 3. Ordering Fractions and Decimals

Geometric Terms and Shapes

- 1. Identifying and Imagining Shapes
- 2. Shapes That Look Alike
- 3. Moving Shapes Around

Interpreting Tables and Graphs

- 1. Interpreting Tables
- 2. Interpreting Graphs
- 3. Creating Tables and Graphs

Likely Outcomes

- 1. Talking about probability
- 2. Finding the probability
- 3. Counting the number of combinations

Multiplication and Division - Problem Solving

- 1. Multiplication Situations
- 2. Division Situations
- 3. What To Do With Remainders
- 4. "Increasing Over Time"
- 5. Situations With a Twist

Number and Shape Patterns

- 1. Exploring Sequences of Numbers
- 2. Exploring Sequences of Shapes
- 3. Exploring Geometric Patterns

Problem-Solving Strategies

- 1. Making a Plan
- 2. Carrying out the Plan
- 3. Putting it into Words

Time and Units of Measure

- 1. Basic Time and Money Skills
- 2. Clocks, Calendars, and Time
- 3. Units of Measure
- 4. Making Actual Measurements

<u>Using Number Sentences</u>

- 1. What is a Number Sentence?
- 2. Understanding Number Sentences
- 3. Number Sentences and Problem Solving

Whole Numbers

- 1. Place Value
- 2. Ordering Numbers
- 3. Rounding Numbers

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FIGURE 30 Diagram of an "Instructional Tools" Display

LOGOUT F NEXT > recognize the need for numbers in between whole numbers. What if you want to share one cookie between two friends? How much should each person get? When we break groups on whole items into equal parts, we can create fractions and decimals. What part of the pizza has been eaten? What portion of the picture is shaded? Initially, students' experiences with fractions and decimals center around exploring part of a whole. The ability to work with fractions and decimals will expand the range of problems that As students learn more and more about numbers, they Help & Support: About the Grow Metwork. Terms of Service.: Security & Privacy Policy.: Contact Ur --Choose another topic--The Essentials of Fractions and Decimals The **Grow** Teacher Report" BOARD OF EDUCATION . THE CITY OF NEW YORK 3. Ordering Fractions and Decimals 1. Understanding Fractions 2. Understanding Decimals students can solve. Introduction Teaching Tools for Fractions and Decimals class 402 - MATH (4) Resource Problems Online Resources Additional instruction and practice · for All Essentials 2. Understanding Decimals Advanced work 3. <u>Ordering</u> <u>Fractions and</u> <u>Decimals</u> 1. Understanding · Help with / fundamentals for Essential 3 · The Standards · for Essential 2 · for Essential 1 Curriculum Resources Introduction Fractions Essentials Resources Activities F MAIN MENU Contents

FIGURE 31 Diagram of Potential Hyperlinks in a Display Website

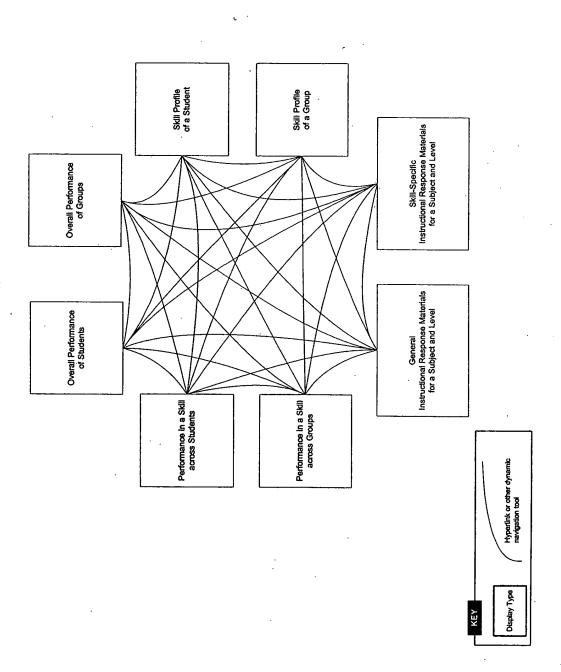


Diagram of a Potential Electronic Display of "Performance in a Skill across Groups" FIGURE 32

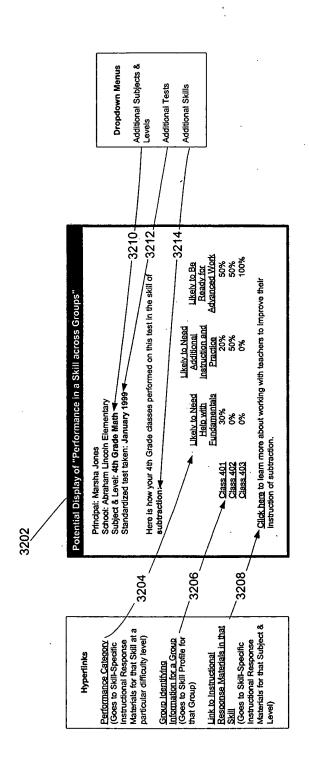


Figure 33 Flowchart of a Display Website with an Ongoing Assessment Component

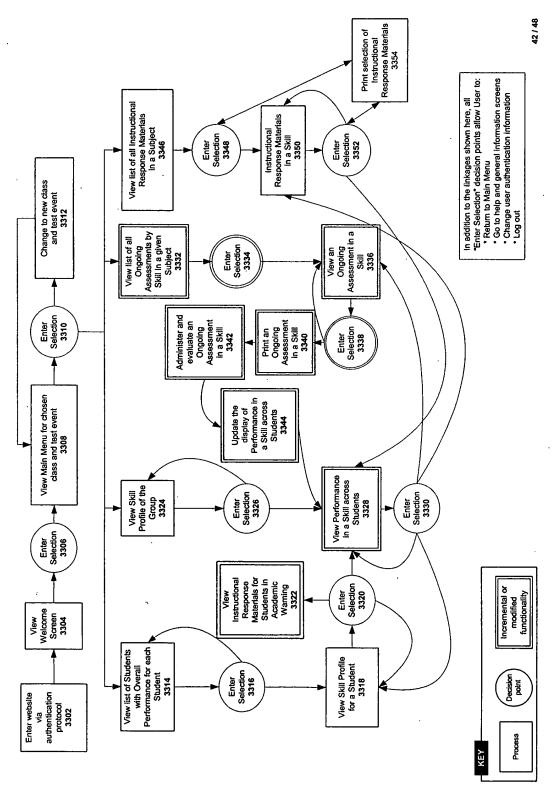
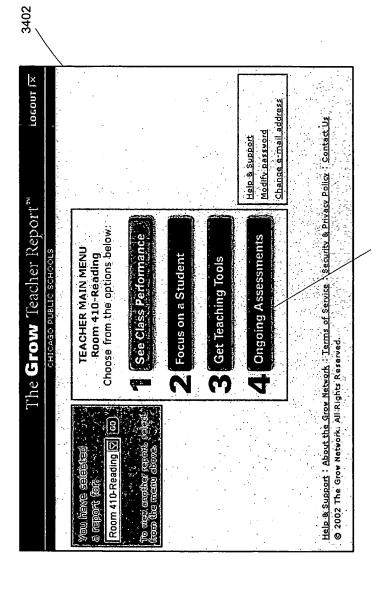


Diagram of a "Welcome" Display for a Website with an Ongoing Assessment Component FIGURE 34



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F MAIN MENU

The **Grow** Teacher Report™

CHICAGO PUBLIC SCHOOLS

Ongoing Assessments: Reading

Undate Flexible Groupings

Contents

- · Author's Purpose
- · Cause and Effect
- Character
- Fact and Opinion
- · Genre and Literary Terms
- Main Idea and Theme
- · Predicting Outcomes
- · Sequence
- Setting
- · Words and Phrases in Context

What are Ongoing Assessments?

The Grow Network's Ongoing Assessments in Reading are a good way to "take the pulse" of your class in important topic areas. You can give an Ongoing Assessment at the start of a unit, at the end of a unit, or whenever you want to find out quickly "where your class stands" in any given area.

When you finish grading an Ongoing Assessment for any given student in your class, you can update the student's Flexible Grouping information in your Grow Report Online.

Format of Ongoing Assessments

Ongoing Assessments include sample questions, an answer sheet, and a teacher reference guide with scoring suggestions.

Each Ongoing Assessment in Reading is made up of two multiple choice and two short answer questions. These questions are chosen to test your students' ability to comprehend key details from a brief reading passage.

Ongoing Assessments are designed to be easy to grade. Scoring on the multiple choice questions is always 1 point for a correct answer and 0 points for an incorrect answer. Scoring on the short answer questions is 2 points for a correct response, 1 point for a partially correct response, and 0 points for an incorrect response.

Here is a suggested way to update the Flexible Groupings in your Grow Report Online, based on how your students perform on the Ongoing Assessment:

0-1 points Fundamentals column

2-4 points Practice column

5-6 points Advanced Work column

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FIGURE 36

Diagram of a "Performance in a Skill across Students" Display for a Website with an Ongoing Assessment Component

3602

Diagram of an "Update Student Skill Assignments" Display for a Website with an Ongoing Assessment Component FIGURE 37

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odate Flexible Groupings		
order to move a student to a new category, k the circle under the appropriate column for th student. Then click "Submit" at the bottom the page. To start over with the previous ues, click "Reset."	Original position F = Help With Fundamentals P = Additional Instruction and Practice A = Advanced Work	
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Chicago Public Schools - Grade 4 Reading

Character

The Grow Network - Ongoing Assessment

Read the following passage. Then answer the questions below.

Michelle wanted to be the best shot on her basketball team. Every morning she went to school early and spent an hour practicing in the gym by herself. In the evening, she would practice all alone at the playground near her house. She loved the swish sound of a perfect shot, and she was improving every day. But she still wasn't as good as her best filend Lisa, the team's star forward. Sometimes Lisa teased her for trying so hard, but Michelle would just smile and keep practicing.

- 1. Which word best describes Michelle?
 - a) jealous b) dedicated

 - c) lonely d) frustrated
- 2. At the end of the passage, why does Michelle smile?

 - a) Lisa has just told Michelle a joke.
 b) Michelle likes being alone.
 c) Michelle is about to make a successful shot.
 d) Michelle is confident that she's doing the right thing.
- 3. Michelle and Lisa are both characters in this passage. List three (3) things the passage tells us about Lisa.
- 4. In your own words, describe what problem Michelle faces. What does she do to overcome It?

SCORING GUIDE

- 1. The correct answer is (b), dedicated.
 - 0 Points = incorrect or no answer 1 Point = correct answer
- 2. The correct enswer is (d), Michelle is confident that she's doing the right thing.
 - O Points = incorrect or no enswer 1 Point = correct enswer
- 3. For sample responses, see Teacher Reference Guide below.

 - 0 Points = all incorrect or no answer 1 Point = one or two things about Lisa 2 Points = three things about Lisa
- 4. For sample responses, see Teacher Reference Guide below
 - O Points = no answer or both parts of question incorrect
 1 Point = one part of question correct
 2 Points = both parts of question correct

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Here is a suggested way to update the Flexible Groupings in your Grow Report Online, based on a student's total score on the Ongoing Assessment:

- 0-1 points Fundamentals column 2-4 points Practice column 5-6 points Advanced Work column

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FIGURE 39

Diagram of a "Focus on a Student" Display for a Website with an Ongoing Assessment Component

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Focus on a Student: Anita Gupta	ıt:		Choose another student (60	2080
This student scored resources to identify	in the A	cademic W difficulties,	This student scored in the Academic Warning level in Reading . For additional resources to identify Anita's difficulties, visit "Primary Assessment Tools".	
	Average	Average % Correct	Click on a topic below to see your	_/
and the second seco	This Student	CPS Students	class's breakdown in that topic.	3904
Tools and Techniques			Based on this information, Anita Gupta is likely to need	
Stated Information	91	83	Help with Fundamentals	
Words and Phrases	88	84	Main Idea and Theme	
Genre and Literary Terms	91	87	<u>Character</u>	
Bringing Texts to Life			Fact and Opinion	
Sednence	29	62	Author's Purpose	
Setting	81	75	Setting	
Character	45	54	Cause and Effect	
Evaluating Evidence			Drodiction Outcome	
Fact and Opinion	9	9	בובחרווות סחרסווופי	
Cause and Effect	73	75	Additional Instruction and Practice	
Overall Meaning		•	Sequence	
Main Idea and Theme	4	20	Stated Information	
Author's Purpose	47	49	Advanced Work	
Predicting Outcomes	53	63	Genre and Literary Terms	
			Words and Phrases	
	-			
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